

TWO-SIDED DEPLOYABLE THERMAL RADIATOR SYSTEM AND METHOD

ABSTRACT

A spacecraft heat dissipation method, and a spacecraft having an improved thermal radiator system that uses two-sided deployable thermal radiators that dissipates heat from both front and back surfaces thereof. The use of the two-sided deployable thermal radiators enables the thermal radiator system to have approximately 50% more heat dissipating capability than a system with just one surface exposed to dissipate heat. The spacecraft includes a body, one or more solar arrays, and the present radiator system which comprises opposite facing fixed payload radiators that are thermally coupled to selected ones of the deployable radiators by way of heat pipes. In an exemplary method a spacecraft is configured to have a body, one or more solar arrays, opposite facing fixed payload radiators, and one or more two-sided deployable radiators selectively coupled to the fixed payload radiators. The spacecraft is launched into orbit. When in orbit, heat coupled to the opposite facing fixed payload radiators is transferred to the two-sided deployable radiators for radiation into space from both sides thereof.